

 THE RECYCLING PARTNERSHIP



Exploring Hub and Spoke Recycling


Mississippi Solid Waste and Recycling Conference
Bay St. Louis, MS


May 2018

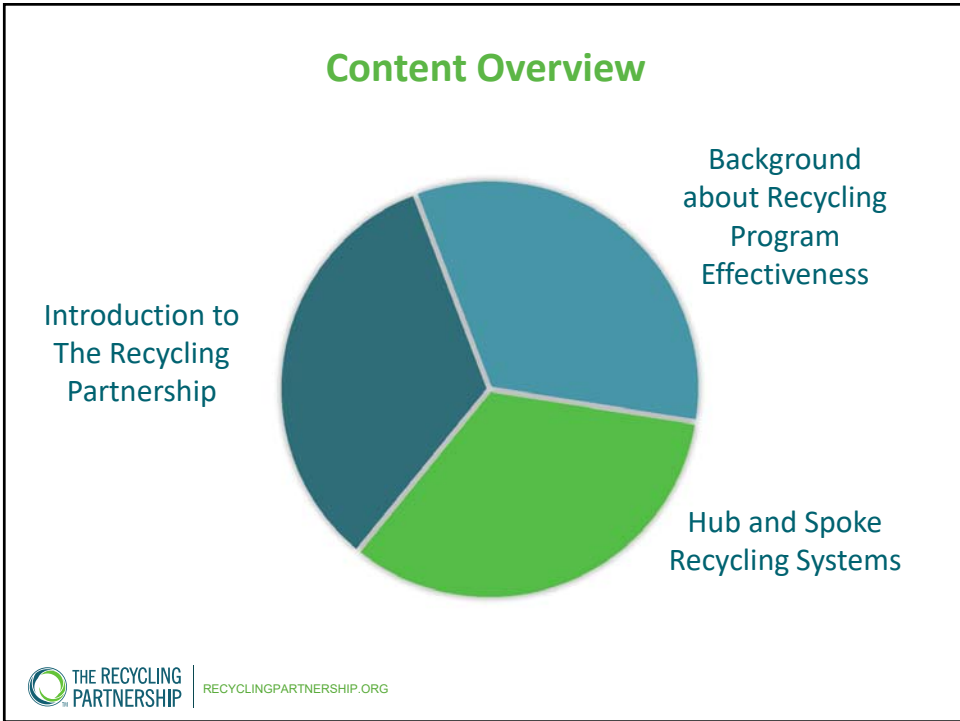
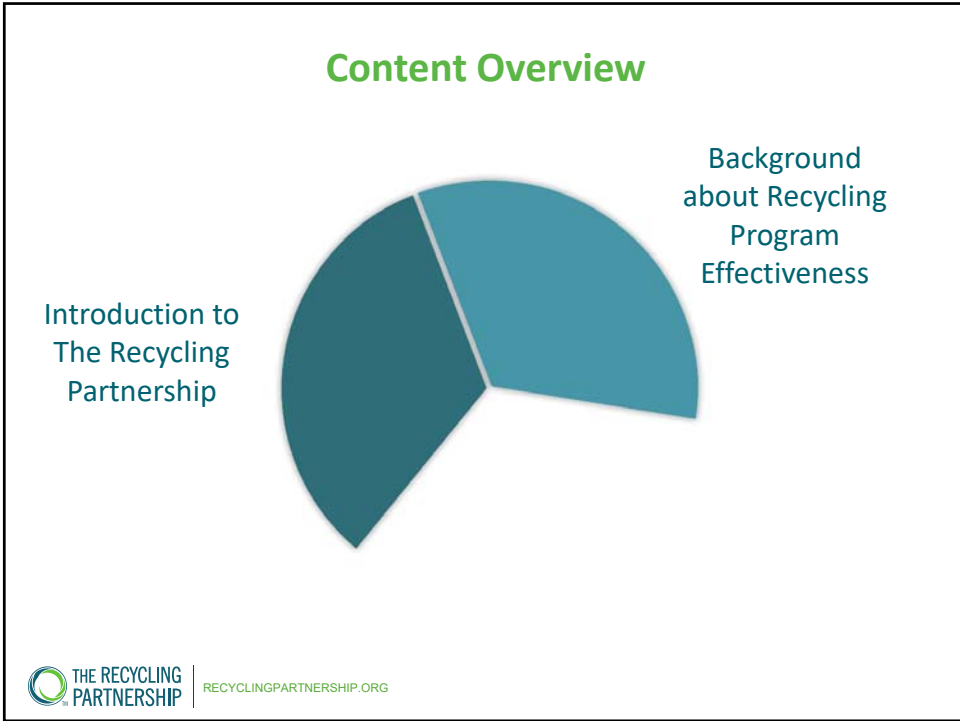
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Content Overview

Introduction to
The Recycling
Partnership



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We Work Hand in Hand with Communities and Companies

Improving recycling for:
THE ENVIRONMENT | THE ECONOMY | THRIVING COMMUNITIES



OPERATIONS



EDUCATION



MEASURABLE CHANGE

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GROW INFRASTRUCTURE
Access delivers year over year results



EXPERT ASSISTANCE
Aligning operations and education optimizes output



TOOLS AND DATA
More than 20K local programs lack resources but determine success.



SYSTEM SOLUTIONS
The system is loosely connected but highly dependent

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National nonprofit transforming recycling in towns all across America

Our Funding Partners

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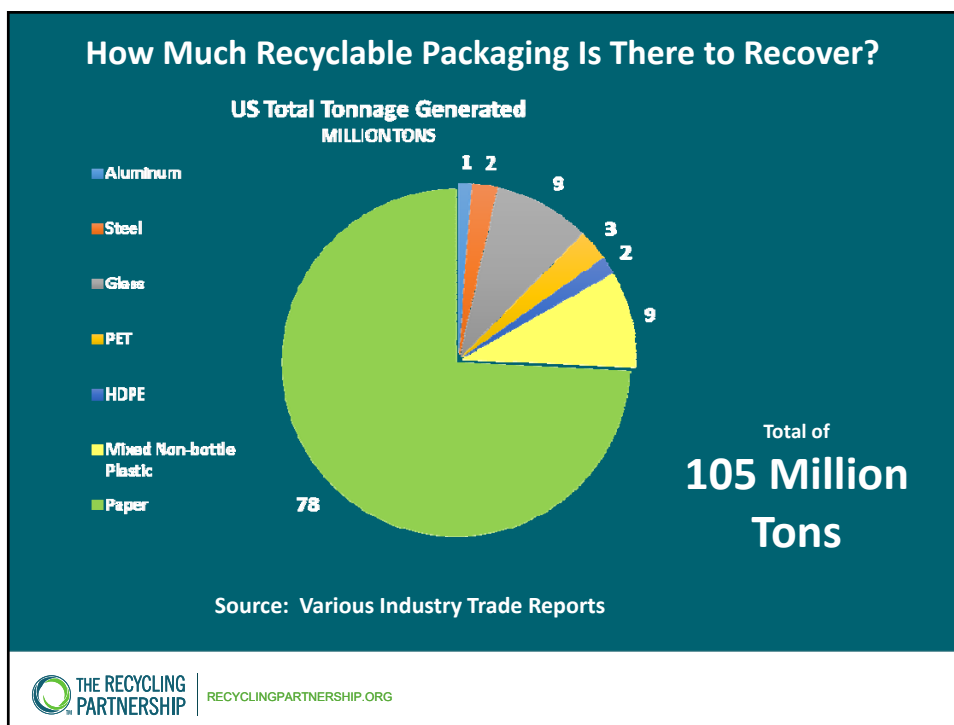
Growth and Impact

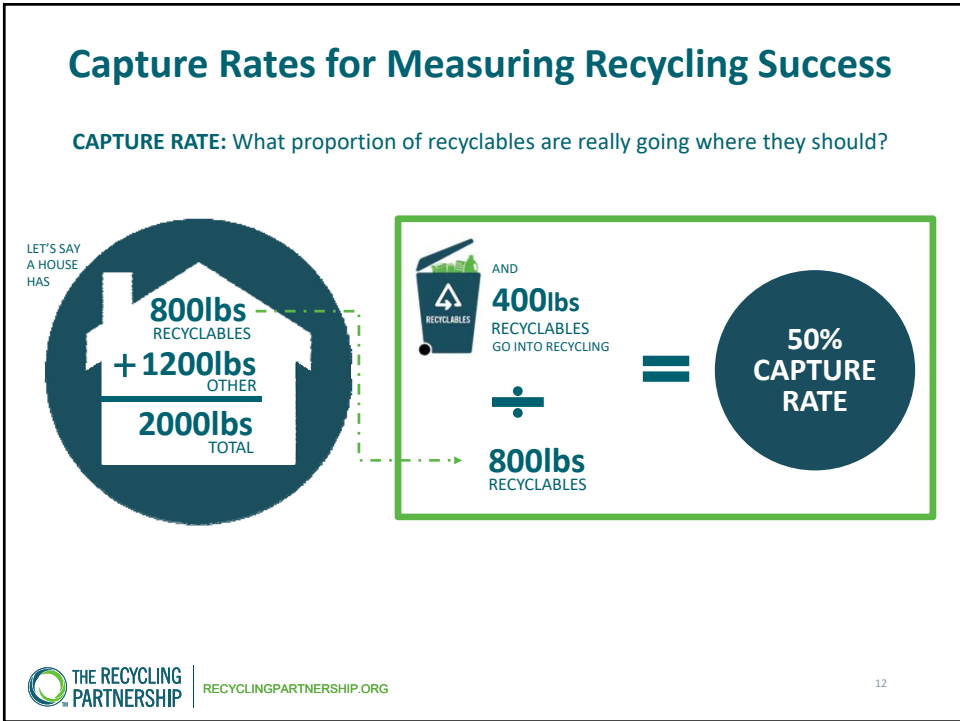
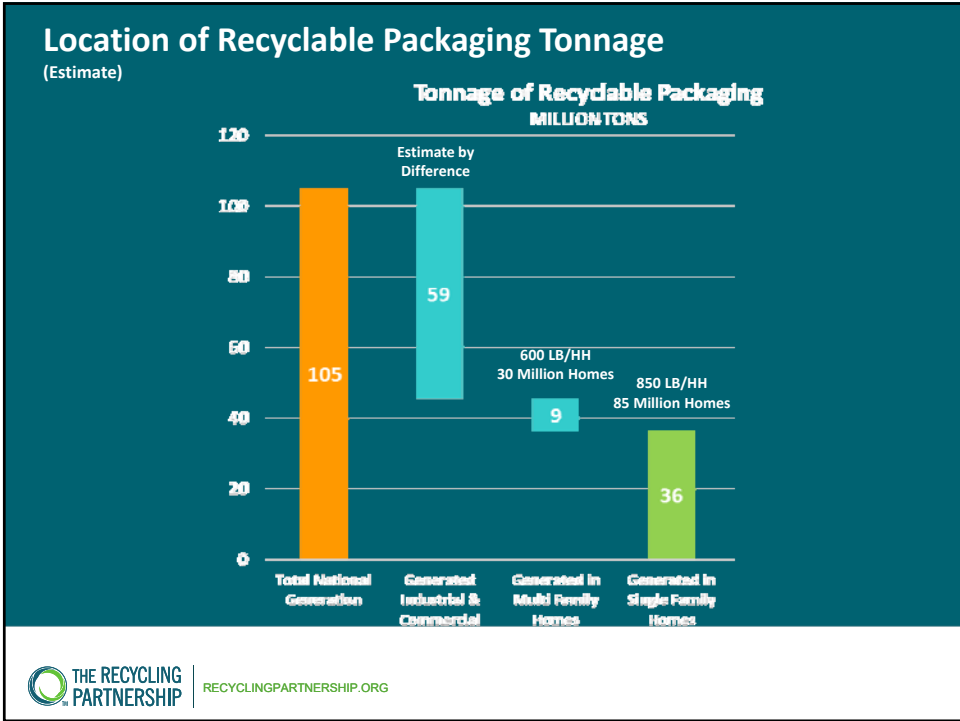
<p>COMMUNITIES SUPPORTED</p>	<p>From 6 to almost 40 funding partners and increased revenue fivefold</p>
<p>\$ INVESTMENT IN RECYCLING INFRASTRUCTURE</p>	<p>By end of 2018, we will unlock \$33M in new infrastructure, reach more than 750 communities and place 500,000+ carts</p>
<p>RECYCLABLES DIVERTED (LBS)</p>	<p>Have city data to know where to work to increase recycling & can quantify our impacts in GHG and tons.</p>

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THE RECYCLING SYSTEM IS LOOSELY CONNECTED, HIGHLY DEPENDENT

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Examination of Recyclable Materials Capture in Charlotte, NC

	WASTE 	RECYCLE 	TOTAL
Recyclable Material	Pounds / Household	Pounds / Household	Pounds / Household
Newspaper	11.72	86.32	98.04
OCC	45.21	73.00	118.21
Mixed Paper	150.70	88.21	238.91
Rigid Plastics	15.07	1.94	17.01
PET	36.84	19.84	56.68
HDPE	20.09	13.96	34.05
Other Plastic Containers	30.14	2.65	32.79
Glass	65.30	113.55	178.85
Steel	20.09	10.19	30.28
Aluminum	25.12	5.05	30.17
Total:	420.30	414.72	835.01

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Capture Rate – doing the math for Charlotte

For the average household, in one year:

- 414.72 pounds of recyclable materials recycled
- 420.30 pounds of materials disposed
- 835.01 pounds total generated

$$\frac{414.72}{835.01} = 0.497$$

- Capture Rate = 49.7%



The Case for Commingling

- Collection is one of the most expensive aspects of recycling
- Commingling recyclable materials substantially reduces collection cost
- Advantages gained:
 - Increased Participation
 - Increased Recovery
 - Enables use of Compaction

2016 STATE OF CURBSIDE REPORT



Key Attributes:


- Container Type & Size
- Frequency of Collection
- Material Mix
- Public vs. Private Collection
- Automatic vs. Opt-in
- Accepted Material (as communicated via web)
- MRF
- MSW Tip Fee
- Curbside Tonnage

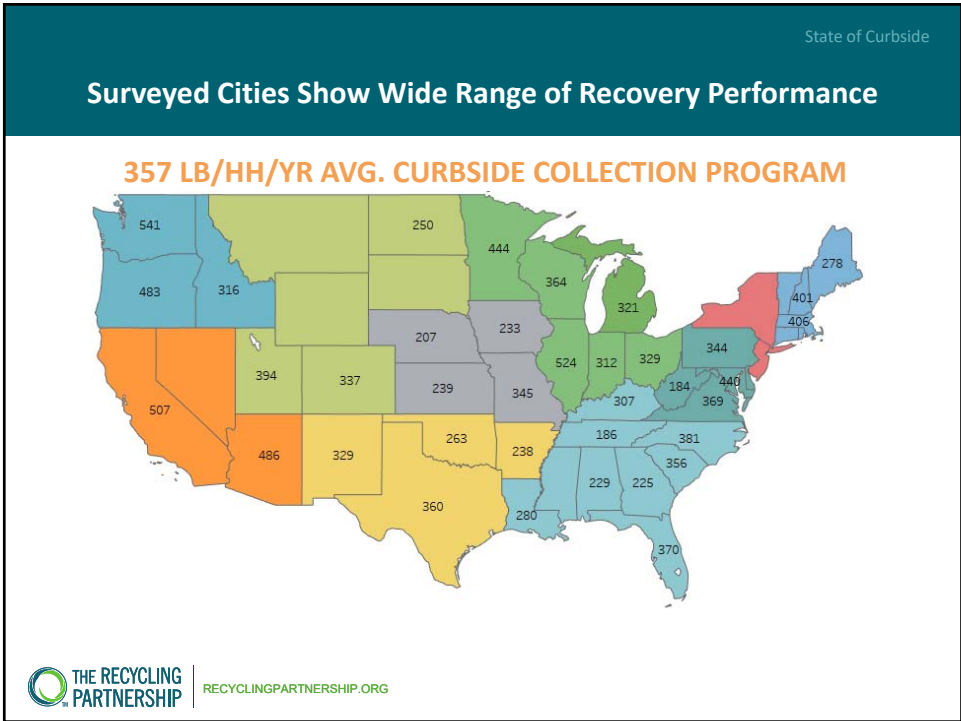
State of Curbside

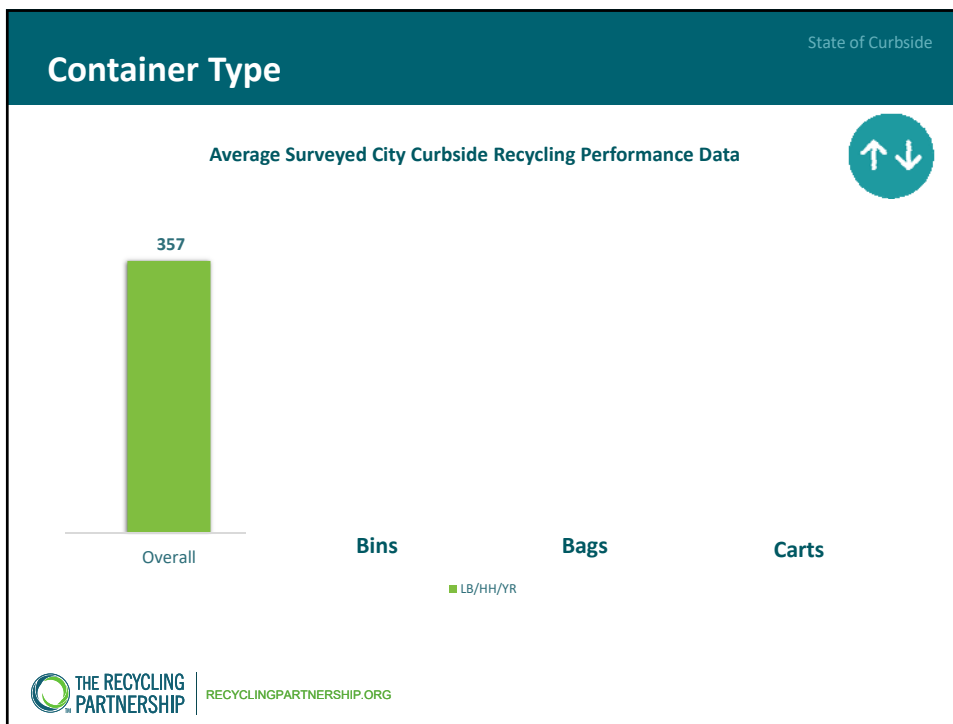
PURPOSE

Analysis for EPA to Identify

- The State of Curbside (facts and figures)
- Indicators of Success
- Areas of Opportunity


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PROFILE OF THE HIGHEST-PERFORMING CITIES SURVEYED (OVER 400 LBS/HH/YR)

83%
COLLECT IN CARTS

93%
PROVIDE COLLECTION
AUTOMATICALLY

96%
SINGLE-STREAM
COLLECTION

WHEN THE LOCAL GOVERNMENTS ARE ENGAGED IN THE RECYCLING PROGRAM AND HAVE TRIGGERED AN "ACTION" TO INCENTIVIZE RECYCLING IS WHEN YOU SEE THE MOST SUCCESS.

100%
PUBLIC ACTION

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Drop-off & Commingling

- Benefits: Tonnage Increase + Operational Savings
- Tonnage:

Annual Drop-off Recycling Program Tonnage			
NC County	Before (Source Separated)	After (Commingled)	Change
Franklin County	996	1,560	+56%
Moore County	1,035	1,356	+31%
Rutherford County	764	1,192	+56%


Drop-off & Commingling

- Benefits: Tonnage Increase + Operational Savings
- Operational cost savings when moving to compacting roll-off collection:


Monthly Hauling Cost Per-Site		
NC County	Before (Source Separated)	After (Commingled)
Richmond County	\$825	\$450
Rutherford County	\$918	\$126



Richmond County, NC – Lower Cost Per Ton



US HIGHWAY 1 CONVENIENCE SITE							
BEFORE				AFTER			
Month / Yr	Recycling Tonnage	# of Service Trips	Service Cost	Month / Yr	Recycling Tonnage	# of Service Trips	Service Cost
Jan-16	3.12	2	\$600.00	Jan-17	n/a	n/a	n/a
Feb-16	2.67	2	\$600.00	Feb-17	n/a	n/a	n/a
Mar-16	3.57	3	\$900.00	Mar-17	7.01	1	\$300.00
Jan-17	6.22	4	\$1,200.00	Apr-17	14.29	2	\$600.00
Total	15.58	11	\$3,300.00	Total	21.3	3	\$900.00
Avg. Cost / Tn			\$211.81	Avg. Cost/Tn			\$42.25



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The Role of the MRF





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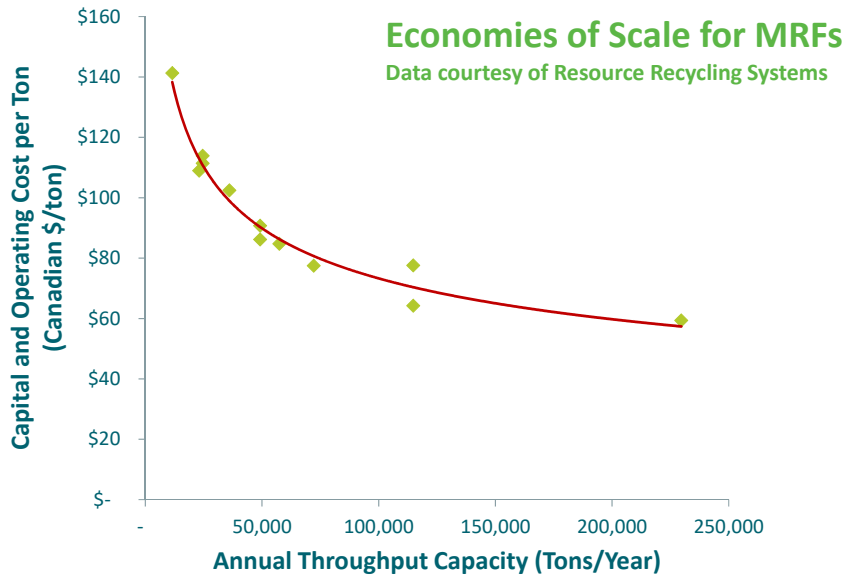
Economies of Scale and Solid Waste Management

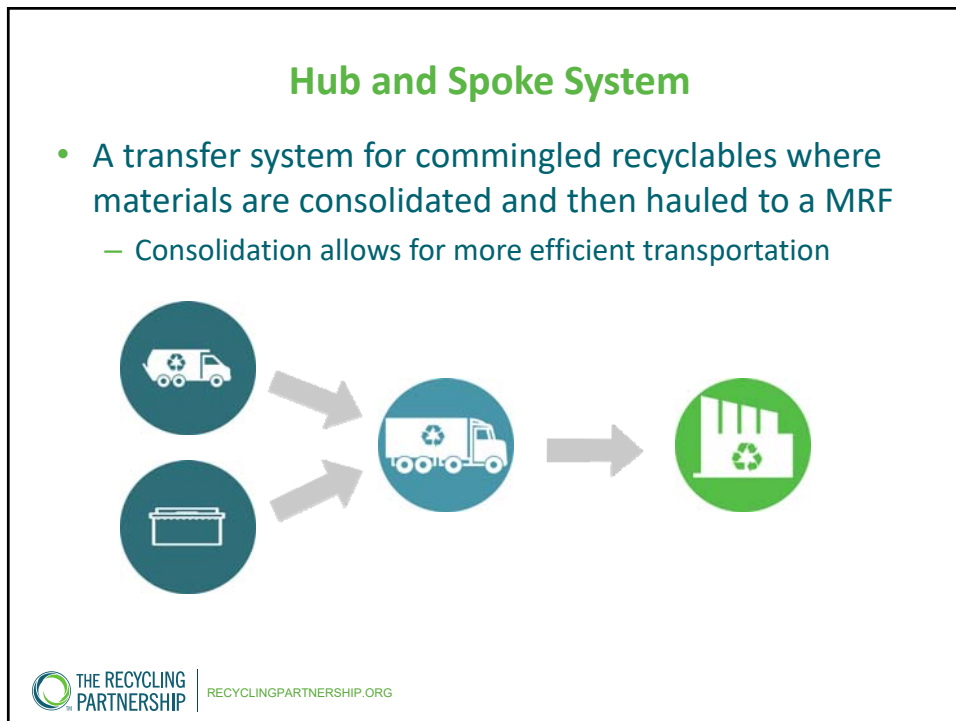
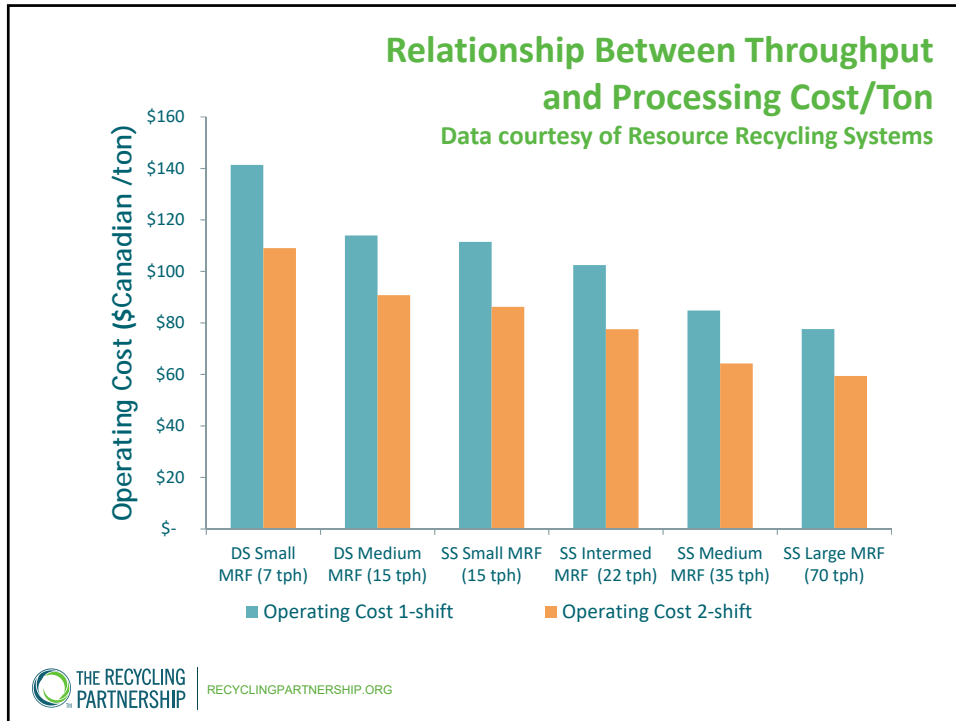


Economies of Scale and Solid Waste Management



Economies of Scale and Solid Waste Management





Why Hub and Spoke Is Important

- Expands access to materials processing
- Delivers the benefits of commingled collection to areas w/o nearby MRF
- Result = Helps small and remote communities:
 - implement new recycling programs,
 - increase participation and recovery, and
 - reduce operational costs



Hub and Spoke Examples



Dedicated Recycling Transfer Station



Hub and Spoke Examples



Use existing MSW Transfer Station

Soft-shell Covered Receiving Area



Compactor Configuration



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Low-Tech - Consolidate Using Roll-offs



un-compacted

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Additional Thoughts about Hub and Spoke

- Use consolidation point as an opportunity for Quality Control
- Keep materials dry
- Protect from wind
- Seek partners to maximize efficiencies and share benefits

**TRY THESE TOOLS,
JOIN OUR NETWORK,**
and let's make recycling more & better!



TOOLS

Online
Library
Starters
BMPs

IDEAS

Webinars
Newsletters
E-Books
Forums

RESOURCES

Grants
Campaigns
Tech
Assistance

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